



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,048	08/28/2003	Yasuhiro Matsuo	Q77203	7232
23373	7590	04/29/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			GLEITZ, RYAN M	
			ART UNIT	PAPER NUMBER
			2852	

DATE MAILED: 04/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/650,048 Examiner Ryan Gleitz	MATSUO ET AL. Art Unit 2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 22 February 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-14 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1, 3/1, 6-9, and 14 is/are rejected.
- 7) Claim(s) 2, 3/2, 4, 5, and 10-13 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 28 August 2003 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/22/05</u> | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 3/1 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyazawa et al. (JP 2001-134074).

Miyazawa discloses an image forming apparatus including a rotary (3), a rotary driving motor (9) for rotating the rotary (3), AND a plurality of development units (4, 5, 6, 7) each of which is mounted to the rotary (3). Conventional rotary developer cartridges, as shown in figure 1, include a development unit replaceable at a replacement position. A development roller (4a) is for carrying developer and an input gear (19), a development unit driving motor (11) is for driving the development roller (4a), and a development unit driving gear (15) which is disposed outside the rotary such that the development unit driving gear (15) can be selectively meshed with the input gear (19) of one of the plurality of developing units and to which the driving force of the development unit driving motor (11) is transmitted.

A control device, CPU ([0021]), is for controlling the drive of the rotary driving motor (3) and the development unit driving motor (11), wherein during the image forming operation, the development rollers (4a) of the respective development units are set at the development position relative to a photoreceptor (8) by turns according to the rotation of the rotary (3) and, at the development position, the input gears (19) of the respective development units are meshed

with the development unit driving gear (15) so as to drive the development rollers with the driving force of the development unit driving motor (11) by turns, thereby achieving multi-color development.

The rotary is slowed down when it reaches a developing position ([0021]-[0022]). When the rotary is transitioning from one color to the next, no image formation occurs, and therefore, the apparatus is in a non-image formation state.

This reads on a rotary driving motor control means which controls the rotary driving motor (9) for the rotation of the rotary during the non-image forming operation such that the rotational speed of the rotary in a contact region where the input gear (19) collides with the development unit driving gear (15) is lower than the rotational speed of the rotary in a region other than the contact region.

Referring to claim 3/1, lever spring (23) and an damper (24) are an impact absorbing means for absorbing an impact generated when the input gear (14) collides with the development unit driving gear (15) during the rotation of the rotary (3) in the non-image forming operation provided on the development unit driving gear side.

Claims 6, 9/6, and 14/6 are rejected under 35 U.S.C. 102(b) as being anticipated by Nukui (JP 10-142886).

Nukui discloses an image forming apparatus comprising a developing device of a rotary development type having a rotary (81) on which a plurality of development units (31) are mounted, and a locking means shown in figure 5 for positioning the rotary in order to selectively set the development units at a predetermined position and for locking the rotary at the predetermined position.

The locking means comprises a lockable position (82) formed on the rotary side, a locking member (91) which is movably disposed on the body of the image forming apparatus and has a locking position where the locking member (91) is engaged with the lockable position (82) to lock the rotary (81) and an evacuation position where the locking member is not engaged with the lockable position. See translation [0024].

Spring (108) is a shifting means for shifting the locking member (91) to the evacuation position, and a solenoid (not shown; [0024]) is a biasing means (108) for biasing the locking member to the locking position.

Regarding claim 14, the solenoid also serves as the shifting means. See translation [0024].

The locking member (91) has a contact portion, the angled part of the arm, which can come in contact with the lockable position (82) before the engagement with the lockable position (82) according to the rotation of the rotary (81).

Regarding claim 9/6, the position of the locking member (91) when it is not in contact with the lockable position (82) is a standby position on the locking position side and wherein the locking member is set at the standby position before the locking member is engaged with the lockable position.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nukui (JP 10-142886) in view of Okazawa (US 5,471,292).

Nukui discloses the rotary image forming apparatus above including a driving means for the rotary. Nukui is silent on the problem of rotary overrun.

However, Okazawa identifies that rotary overrun is a problem found in rotary image forming apparatus. Even when a single drive is set for the stepping motor, the deceleration operation may become insufficient depending on a change in condition of the developers, and the like. In this case, the stepping motor causes an out-of-phase state, and the developer selection unit 1 does not stop at a required position, e.g., overruns a target stop position. (Col. 2, lines. 42-48). See figures 12 and 13.

It would have been obvious to one of ordinary skill in the art at the time the invention was made that the rotary device of Nukui would suffer from overrun taught by Okazawa to be common in developing rotaries because of inertial forces inherent in accelerating and decelerating the rotary.

Claims 8, 9/8, and 14/8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nukui (JP 10-142886) in view of Hattori et al. (US 5,585,911).

Nukui discloses the rotary image forming apparatus above but does not disclose a power transmission control means.

However, Hattori discloses a rotary image forming apparatus including a driving motor (8) for driving the development unit (3) and the rotary (2), and a power transmission control means, clutch (11 or 12) for conducting the transmission and isolation of the driving force of the driving motor (8) to at least one of the development unit (3) and the rotary (2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the drive means of Nukui with the power transmission control means taught by Kishigami to allow the development unit and rotary to share a single drive means which simplifies the construction of the apparatus and reduces cost.

***Allowable Subject Matter***

Claims 2, 3/2, 4, 5, and 10-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

Applicant's arguments filed 22 February 2005 have been fully considered but they are not persuasive.

Applicant submits that claim 1 reads over Miyazawa et al. because claim 1 recites "non-image formation" and Miyazawa et al. teach the related features only during image formation. See Applicant's Arguments, page 14.

The claim limitation “non-image formation” is construed to include any time when the developing unit is not producing an image. While Applicant may be construing to “non-image formation” to include only a time when the developer units are exchanged or replaced, these limitations are not present in the claim. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant submits that claim 6 reads over Nukui because Nukui fails to disclose that the pins (82Y) come in contact with the locking lever (91) before the locking lever is engaged with the pins by the rotation of the rotary. See Applicant’s Arguments, page 16.

Referring to figure 4 of Nukui, pin (82Y) is shown to be engaged to locking lever (91), as pointed out by Applicant. The pin travels in a circles according to the rotation of the rotary unit, and at specific times, is held in place by the locking lever. There must be some time at which the pin contacts the locking lever before the two become engaged. Engagement, by the laws of physics, cannot be instantaneous. Additionally, even if the engagement could be instantaneous, there would still be some time, for example the last time yellow developer (for pin 82Y) was used, that the pin (82Y) was in contact with the locking lever (91), before the present engagement of pin (82Y) with locking lever (91).

#### ***Other Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kabayashi et al. (JP 09-244402) disclose a rotary device including a locking lever and a solenoid.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Gleitz whose telephone number is (571) 272-2134. The examiner can normally be reached on Monday-Friday between 9:00AM and 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

rg



Arthur T. Grimley  
Supervisory Patent Examiner  
Technology Center 2800